

REMARKS/ARGUMENTS

Status of Claims

Claims 1-37 are pending in this application with claims 1 and 11 being the only independent claims. Claims 1, 4, 11 and 16-17 have been amended. New claims 35-37 have been added. Support for the claim amendments can be found, at least, on page 3, lines 10-12 and page 6, lines 15-26 of the specification originally filed.

Overview of the Office Action

Claim 4, 16, 17, 22, and 26 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 5-9, 23, 27, 28 // 11-15 and 30-34 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,962,296 to *Hamel*.

Claims 2, 3, 10, 18-21, 24, 25, and 29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hamel*.

Amendments Addressing Formality Issue

Claims 4 and 16-17 have been amended to recite that “the step of feeding steam comprises injecting the steam from the same nozzle used to apply the heated liquid.” In view of the above amendment, the informalities identified in the Office Action have been removed.

Summary of the Subject Matter Disclosed in the Specification

The following descriptive details are based on the specification. They are provided only for the convenience of the Examiner as part of the discussion presented herein, and are not intended to argue limitations which are unclaimed.

The present specification discloses a method and apparatus for moistening a web to paper or paperboard. The apparatus comprises a steam blow cavity (16) open toward a moving web (1). The steam blow cavity (16) communicates with spray nozzles (5, 6, 7) at least for injecting the steam into the cavity (16) so as to form a steam atmosphere therein. Additionally, the steam blow cavity (16) communicates with the spray nozzles (5, 6, 7) for spraying a mist of a heated liquid onto the web (1) within the thus formed steam atmosphere. The liquid can be heated by a source separate from the steam to a temperature higher than the ambient temperature.

Patentability of the Claimed Invention

Independent Claims 1 and 11

Independent claim 1 recites “applying a spray of liquid heated to a temperature higher than an ambient temperature from at least one nozzle” and that “the liquid is heated by a source separate from the steam.” Independent claim 11 recites “a heating device for heating the liquid using a source separate from the steam.” Support for the amended claims 1 and 11 can be found, at least, on page 6, lines 15-26 of the specification originally filed.

Hamel does not disclose the above claim features because *Hamel* teaches heating the water with steam (*see, e.g.*, col. 6, ll. 36-37). In *Hamel*, water is received in nozzle 22 from a common water chamber 2 (*see, col. 5, ll. 18-23*) and passed to the water nozzle 26 (*see, col. 5, ll. 23-25*). After water is dispensed from the water nozzle 26, the dispensed water is atomized and heated by the steam (*see, e.g.*, col. 6, ll. 36-37). There is no teaching in *Hamel* that the water is heated before it is atomized by the steam, much less being heated by a source separate from the steam. Therefore, *Hamel* does not teach that “the liquid is heated by a source separate from the steam” as recited in independent claim 1 or “a heating device for heating the liquid using a source separate from the steam” as recited in independent claim 11.

Because *Hamel* teaches heating water using the steam, the water heating process cools the steam and consequently adversely affects the heating effect of the steam atmosphere created to heat and moisten the web. Such cooling effect in *Hamel* can cause condensation resulting in large droplets in the steam atmosphere.

In contrast, the subject invention employs a heated liquid, which can import heat to the web in addition to moistening the same. Because the liquid is heated separately from the steam, there is no reduction to the heat energy of the steam fed into the system. Therefore, independent claims 1 and 11 each patentably distinguish over *Hamel*.

In view of the above, withdrawal of the 35 U.S.C. § 102(e) rejections of claims 1 and 11 is respectfully requested.

Dependent Claims 2-10 and 12-37

Claims 2-10 and 12-37 depend, directly or indirectly, from allowable independent claim 1 or 11 and are thus allowable for at least the same reasons that independent claim 1 or 11 is allowable.

In addition, claims 2-10 and 12-37 include features which serve to even more clearly distinguish the claimed invention over the prior art of record.

Conclusion

Based on all of the above, it is respectfully submitted that the present application is now in proper condition for allowance. Withdrawal of all claim rejections is hereby respectfully requested. Prompt and favorable action to this effect and early passing of this application to issue are respectfully solicited.

The excess claim fees in the amount of \$150 will be submitted to the Patent Office along with the electronic transmission of the subject Amendment. Any additional fees or charges required at this time in connection with the present application may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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